

Remarks

Applicant has carefully reviewed this Application in light of the Office Action sent 2 July 2008. To expedite issuance of a patent from this Application, Applicant has made clarifying amendments to Claims 1, 9, 11, 19, 21, 29, and 31 and canceled claims 2, 5, 7, 12, 15, 17, 22, 25, and 27. Applicant respectfully requests the Examiner to reconsider and allow all pending claims.

Claims 21 and 29-30 Recite Patentable Subject Matter

Under 35 U.S.C. § 101

The Examiner rejects Claims 21-22, 25, 27, and 29-30 as being directed to nonstatutory subject matter. Specifically, the Examiner states:

The amendment requires a new grounds of rejection for new matter. The applicants may resolve this series of rejections by deletion of the new matter, retention of the limitation to software, and presenting a statement that the claims are limited to embodiments of computer readable media that are conventional in the art and do not encompass embodiments of software that are not physical embodiments of computer readable media.

Applicants respectfully submit that independent Claim 21 recites patentable subject matter under 35 U.S.C. § 101 and, as amended, does not recite any new matter. However, to expedite issuance of a patent from this Application, Applicant will consider deleting matter from independent Claim 21 if the Examiner points out specifically what the Examiner believes to be new matter in independent Claim 21. Moreover, Applicant will consider making a statement that independent Claim 21 and its dependent claims are limited to embodiments of computer-readable media that are conventional in the art and do not encompass embodiments of software that are not physical embodiments of computer readable media.

Applicant respectfully requests the Examiner to reconsider and allow Claim 21 and all its dependent claims.

**The Claims Recite Patentable Subject Matter
Under 35 U.S.C. § 101**

The Examiner rejects Claims 1-2, 5, 7, 9-12, 15, 17, 19-22, 25, 27, and 29-31 under 35 U.S.C. § 101 as being directed to nonstatutory subject matter. Specifically, the Examiner states:

Claims 1, 2, 5, 7, 9-12, 15, 17, 19-22, 25, 27, and 29-31 do not require production of a tangible result in a form that is useful to the user of the process or apparatus. The claims recite a step of communication of the PMF score for presentation to a user without explicitly reciting a step of outputting a result in a form that is understandable to a user. The recited communication step could be storage of data in a computer memory in a form that is not interpretable to a user. A tangible result requires that the claim must set forth a practical application to produce a real-world result. This rejection could be overcome by amendment of the claims to recite that a result of the process is outputted to a display, or to a user, or in a graphical format, or in a user readable format, or by including a result that is a physical transformation.

Applicant respectfully disagrees with the Examiner. The Examiner cites to *State Street Bank & Trust Co. v. Signature Financial*, 149 F.3d 1368 (Fed. Cir. 1998), and to *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352 (Fed. Cir. 1999), in support of this rejection. However, the claims at issue in those cases—which the Federal Circuit expressly found to recite patentable subject matter—did not recite any output to a display or a user in a graphical format or a user-readable format.¹ Moreover, in *Arrhythmia Research Technology Inc. v. Corazonix*

¹ In *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, the Federal Circuit found that the following claim recited statutory subject matter under 35 U.S.C. § 101:

A data processing system for managing a financial services configuration of a portfolio established as a partnership, each partner being one of a plurality of funds, comprising:

- (a) computer processor means for processing data;
- (b) storage means for storing data on a storage medium;
- (c) first means for initializing the storage medium;
- (d) second means for processing data regarding assets in the portfolio and each of the funds from a previous day and data regarding increases or decreases in each of the funds['] assets and for allocating the percentage share that each fund holds in the portfolio;
- (e) third means for processing data regarding daily incremental income, expenses, and net realized gain or loss for the portfolio and for allocating such data among each fund;
- (f) fourth means for processing data regarding daily net unrealized gain or loss for the portfolio and for allocating such data among each fund; and

Corp., the Federal Circuit similarly found claims not reciting any output to a display or a user in a graphical format or a user-readable format to recite patentable subject matter.² 958 F.2d 1053, 1055, 1059-61 (Fed. Cir. 1992). Contrary to the assertions made by the Examiner, patentable

(g) fifth means for processing data regarding aggregate year-end income, expenses, and capital gain or loss for the portfolio and each of the funds.

149 F.3d 1368, 1371-72 (Fed. Cir. 1998).

In *AT&T Corp. v. Excel Communications, Inc.*, the Federal Circuit held that the following claim “comfortably falls within the scope of § 101”:

A method for use in a telecommunications system in which interexchange calls initiated by each subscriber are automatically routed over the facilities of a particular one of a plurality of interexchange carriers associated with that subscriber, said method comprising the steps of:

generating a message record for an interexchange call between an originating subscriber and a terminating subscriber, and

including, in said message record, a primary interexchange carrier (PIC) indicator having a value which is a function of whether or not the interexchange carrier associated with said terminating subscriber is a predetermined one of said interexchange carriers.

172 F.3d 1352, 1354, 1358 (Fed. Cir. 1999).

² In *Arrhythmia Research Inc. v. Corazonix Corp.*, the Federal Circuit found that the following claims both recited statutory subject matter under 35 U.S.C. § 101:

1. A method for analyzing electrocardiograph signals to determine the presence or absence of a predetermined level of high frequency energy in the late QRS signal, comprising the steps of:

converting a series of QRS signals to time segments, each segment having a digital value equivalent to the analog value of said signals at said time;

applying a portion of said time segments in reverse time order to high pass filter means;

determining an arithmetic value of the amplitude of the output of said filter; and

comparing said value with said predetermined level.

7. Apparatus for analyzing electrocardiograph signals to determine the level of high frequency energy in the late QRS signal comprising:

means for converting X, Y, and Z lead electrocardiographic input signals to digital valued time segments;

means for examining said X, Y, and Z digital valued time segments and selecting therefrom the QRS waveform portions thereof;

means for signal averaging a multiplicity of said selected QRS waveforms for each of said X, Y, and Z inputs and providing composite, digital X, Y, and Z QRS waveforms;

high pass filter means;

means for applying to said filter means, in reverse time order, the anterior portion of each said digital X, Y, and Z waveform; and

means for comparing the output of said filter means with a predetermined level to obtain an indication of the presence of a high frequency, low level, energy component in the filter output of said anterior portions.

958 F.2d 1053, 1055, 1059-61 (Fed. Cir. 1992).

subject matter under 35 U.S.C. § 101 does not require any output to a display or a user in a graphical format or a user-readable format.

Applicant respectfully requests the Examiner to reconsider and allow independent Claims 1, 11, 21, and 31 and all their dependent claims.

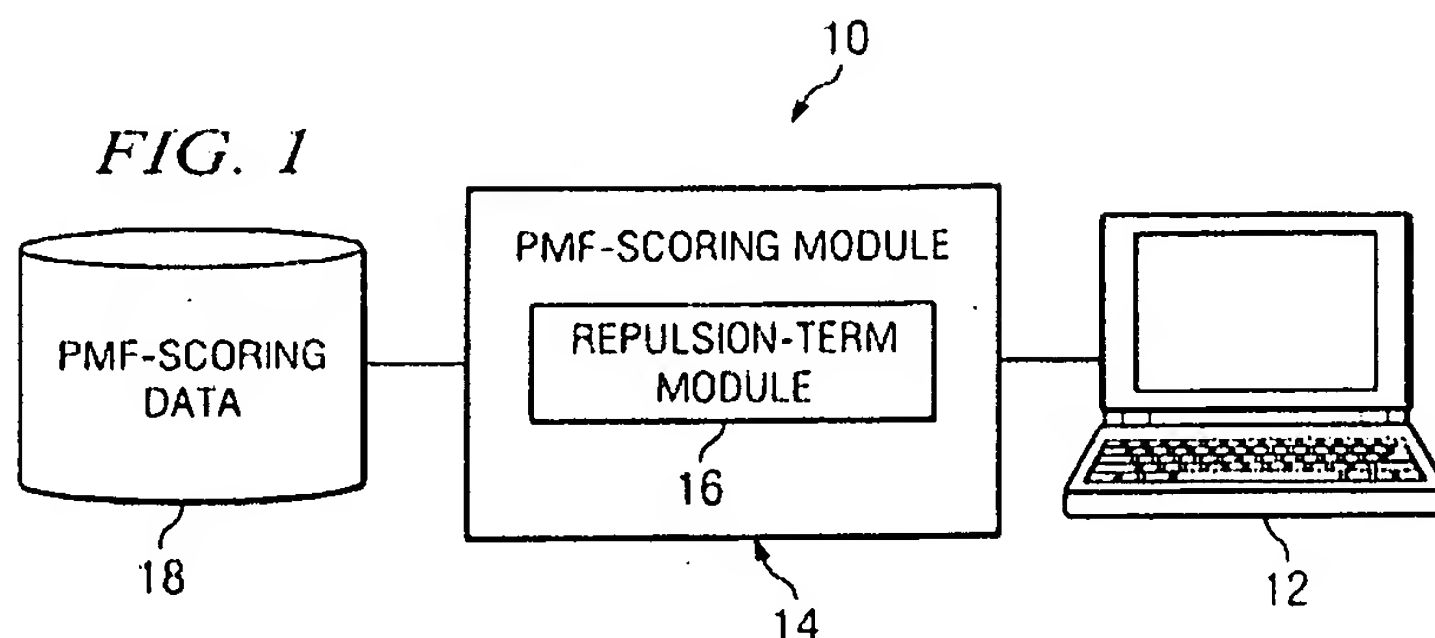
Claims 21 and 29-30 Comply with 35 U.S.C. § 112, Para. 1

The Examiner rejects Claims 21-22, 25, 27, and 29-30 under 35 U.S.C. § 112, para. 1, as failing to comply with the written description requirement. Applicant respectfully disagrees with the Examiner. As an example, the Specification of this Application, as originally filed, includes the following description:

FIGURE 1 illustrates an example system 10 for calculating a PMF score of a protein-ligand complex. System 10 includes a computer system 12 and a PMF-scoring module 14. In particular embodiments, a module may include software, hardware, or both. Computer system 12 may enable a user to provide input to and receive output from PMF-scoring module 14. Computer system 12 may include one or more modules for generating one or more graphical user interfaces (GUIs) for providing input to and receiving output from PMF-scoring module 14. PMF-scoring module 14 may calculate one or more PMF scores of one or more protein-ligand complexes specified by a user and return the calculated PMF scores to the user. A PMF score of a protein-ligand complex may indicate the binding affinity between the protein and the ligand in the protein-ligand complex, and the binding affinity between the protein and the ligand in the protein-ligand complex may indicate the ability of the ligand to inhibit or otherwise modify the function of the protein. PMF-scoring module 14 includes a repulsion-term module 16 that may calculate one or more repulsion terms, as described below. PMF-scoring module 14 may use PMF-scoring data 18 to calculate a PMF score of a protein-ligand complex. PMF-scoring data 18 data that PMF-scoring module 14 may use to calculate a PMF score of a protein-ligand complex. In particular embodiments, PMF-scoring data 18 includes empirically derived parameters (such as minimum binding-energy distance and well-depth values) that may be used to calculate a PMF score of a protein-ligand complex, as described below. Although components of system 10 are described and illustrated as being separate from each other, the present invention also contemplates any suitable components of system 10 being combined with any other suitable components in any suitable manner. As an example and not by way of limitation, in particular embodiments, PMF-scoring module 14 is executed at

computer system 12. As another example, in particular embodiments, PMF-scoring data 18 is stored at computer system 12.

For the convenience of the Examiner, Applicant provides the following reproduction of FIGURE 1:



Applicant respectfully submits that at least these portions of this Application, as originally filed, provide sufficient written description, under 35 U.S.C. § 112, para. 1, of *computer-readable tangible media*, as independent Claims 21 recites.

Applicant respectfully requests the Examiner to reconsider and allow independent Claim 21 and all its dependent claims.

**Independent Claims 1, 11, 21, and 31 are Allowable Over *Muegge I* and
Over the Proposed *Muegge I* – *Mitchell* Combination**

The Examiner rejects independent Claims 1, 11, 21, and 31 under 35 U.S.C. § 102(b) as being anticipated by Ingo Muegge et al., *Evaluation of PMF Scoring in Docking Weak Ligands to the FK506 Binding Protein*, J. MED. CHEM., Vol. 42, Pages 2498-503 (1999) ("*Muegge I*"). The Examiner further rejects independent Claims 1, 11, 21, and 31 under 35 U.S.C. § 103(a) as being unpatentable over *Muegge I* in view of John B.O. Mitchell et al., *BLEEP—Potential of Mean Force Describing Protein-Ligand Interactions: I. Generating Potential*, J. COMP. CHEM., Vol. 20, No. 11, Pages 1165-76 (1999) ("*Mitchell*").

Although Applicant does not necessarily agree with the Examiner, to expedite issuance of a patent from this Application, Applicant has made clarifying amendments to independent Claims 1, 11, 21, and 31.

Applicant respectfully requests the Examiner to reconsider and allow independent Claims 1, 11, 21, and 31 and all their dependent claims.

Conclusion

For at least the foregoing reasons, Applicant respectfully requests the Examiner to allow all pending claims.

If a telephone conference would advance prosecution of this Application, the Examiner may call Travis W. Thomas, attorney for Applicant, at 650.739.7503.

Please charge \$810.00 for the Request for Continued Examination accompanying this Response and \$1110.00 for a three-month extension of time to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P. The Commissioner may charge any fee due and credit any overpayment to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P.
Attorneys for Applicant

A handwritten signature in black ink, appearing to be 'T. T.', with a horizontal line extending from the second 'T'.

Travis W. Thomas
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Date: 31 December 2008

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